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ABSTRACT

Beginning in 1972, the average Scholastic Aptitude Test Verbal (SAT-V) score for men has been higher than that for women. This study created a detailed history of the content of SAT-V sections over the last two and a half decades and examined the changes of test content and trends over time in the balance of references to and representations of women and men within the content of the test. A total of 153 forms of the test was identified as having been used since 1963. Overall review indicated that the shift in content that was most noteworthy was the elimination of the synthesis reading passage in 1974. The relative proportions of item types have otherwise been fairly constant, as has the relative balance between science content and humanistic content. During the 1960-1987 period SAT candidates encountered women subjects or female-related language only rarely, but the trend has been to reduce the disparity between male and female language. Changes in content do not support the hypothesis that content has been responsible for increased male scores. Although the trend toward male-dominated language has been reduced, there has not been a corresponding increase in females' scores. Further research will be necessary to clarify the reasons for the score differences. Three appendixes give classification codes, a summary report for October 1960 to June 1987 scores, and the ordering of SAT-V item types. (Contains 1 figure, 17 tables, and 19 references.) (SLD)

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College Board Report

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Changes in the SAT-Verbal: A Study of Trends in Content and Gender References 1961-1987

Pamela I. Cruise
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College Board Report No. 90-1
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College Entrance Examination Board, New York, 1990

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INTRODUCTION

For almost two decades, men who have taken the College Board's Scholastic Aptitude Test (SAT) have had higher average SAT-verbal scores than have the women choosing to take the test. Beginning with the cohort of students who graduated from high school in 1972, the average SAT-verbal score for men has been higher than that for women. This fact runs contrary to the widely held expectation that women do better than men on tests of verbal ability. That expectation is based on the superior performance of women that was commonly observed on standardized tests throughout the first half-century or so of their use. The pattern was so well established that Coffman observed, "If men and women make comparable scores on a particular test of verbal aptitude, one is likely to suspect some bias in the sampling of either men or women or both" (Coffman 1961, p. 117). Similarly, Maccoby and Jacklin (1974) reported that "female superiority on verbal tasks has been one of the more solidly established generalizations in the field of sex differences" (p. 75). However, they went on to indicate that the results of some then-contemporary research might require that "some of our earlier views concerning the course of development of sex differences in verbal skills should be reconsidered" (Maccoby and Jacklin 1974, p. 75).

Recent evidence and improved analytical methods indicate that any gender difference in verbal ability is virtually nonexistent. Hyde and Linn (1988), based on their meta-analysis of 119 studies using various means of assessing verbal ability, assert that "there are no gender differences in verbal ability, at least at this time, in American culture . . ." (p. 62). The phrase "at least at this time" is very important, because their reanalysis of the Maccoby and Jacklin studies confirmed the magnitude of gender differences previously reported. However, the post-1973 studies analyzed by Hyde and Linn showed a gender difference of only one-tenth of a standard deviation, suggesting a decline in the magnitude of the gender difference in verbal ability to the point of practical insignificance. This is the same order of magnitude of the difference on the verbal sections of the SAT reported by Ramist and Arbeiter (1986)—except that on the SAT-verbal sections it is the women who do marginally less well.

A variety of explanations have been posited for the evidence that women do less well, on average, than men on the verbal sections of the SAT. These explanations have been reviewed by Clark and Grandy in 1984 and, more recently, by Wilder and Powell (1989). One of the persistent hypotheses about the unexpected and consistent depression of women's scores relative to men's is that the content of the test has shifted in such a way as to disadvantage women. Coffman did, in fact, consider the possibility that the choice of test content might be involved in the observed sex differences:

> Consider the possibility that the observed differences in favor of women may be a function of their superiority on *some* of the questions on the test and not on others. If such be the case, and if the test constructor is not aware of which items are producing the difference, he might at some point construct a test form which produces essentially equivalent scores for men and women even though there is no bias in the samples of people. (Coffman 1961, p. 118)

Similarly, Clark and Grandy concluded that

> the possible impact of changes in the tests on test taker performance is harder to document, but it seems likely that some of the changes in item content and format, perhaps even some of the changes made in an effort to assure "sex-neutral" tests, have had some effect on scores, and that these effects have been felt more by women than by men. In any event, it appears to be a possibility that deserves further consideration. (Clark and Grandy 1984, p. 26)

The purpose of the present study is to create a detailed history of the content of the SAT-verbal sections over the last two and a half decades and, in particular, to examine (1) changes over time in the content of the test and (2) trends over time in the balance of references to and representations of women and men within the content of the test. Although the change in the relationship of men's and women's scores stimulated this study, an exploration of that changed relationship in terms of the trends documented in this study is a topic for future research.

The most recent history of the content of the SAT was prepared by Loret in 1960. The nearly 30-year research gap has made it difficult to study changes that may have occurred in the content of the test. In particular, it has made it difficult to respond to the allegations that men have had higher average SAT-verbal scores than women during recent years because of changes in the nature of test content. Thus, the first step in this project was to create a data base regarding the content of the SAT-verbal sections that have been introduced since 1960 and to do an initial analysis of the data as they relate to the purposes of the study. The data base was designed to accommodate annual updates and to serve as the foundation for further studies of the relationship of subgroup membership (i.e., gender or race) to particular item formats and content.

STUDY PROCEDURES

Identifying and Retrieving the Tests

Our initial step was to identify all forms of the SAT that were introduced into the Admissions Testing Program subsequent to Form ISA4, the last form covered in Loret's 1960 *History*. A total of 153 forms were identified, beginning with JSA1 (January 1961) and including 3JSAO5 (June 1987), and copies were retrieved from historical files.

Classifying the Tests and Items

A classification scheme was developed for use in coding each form and each item in the form. Drafts of the classi-

fication scheme were reviewed by a number of experienced test developers. The final classification coding guide is given in Appendix A.

The classification codes used were designed to be descriptive rather than judgmental. Many of these codes are the same as the ones used by test developers to assemble the SAT: item type, item content area, minority relevance, passage content classification, passage length, and reading skill tested. These are the test characteristics that are controlled in making each SAT form parallel to the other forms. Additional classifications were developed to satisfy the particular needs of this project: sex-specific words in analogies, human representation in sentence completions, human role in sentence completions and reading comprehension passages, human content of reading comprehension passages, sex reference in reading comprehension items, and minority reference in reading comprehension items.

Other ways of classifying items and passages were considered and then abandoned. For example, we considered using a code for status of people represented in sentence completions and reading comprehension passages, but we decided against it because such a system would rely too heavily on the judgment and opinions of the individuals doing the classifying. Instead of the status code, we developed the human role code, which tells how people identified by sex are presented—what their occupation is or in what context they appear. Similarly, a coding for technical versus general content in reading comprehension passages would have been interesting but also would have depended heavily on the judgment of the classifiers. A one-sentence description of the content of each passage was provided instead to give some indication of the nature of the passage. Researchers who are interested in investigating how technical certain SAT passages are may find these one-sentence summaries useful in selecting a subset of passages for detailed content analysis.

All the coding was done specifically for this project. In some cases the classifying was mechanical; the item type or the number of lines in a passage was clear and unambiguous. In other cases the appropriate classification was not all that clear, or certain items did not fit neatly into the classification scheme. Some of the limitations encountered in applying the classification scheme to this body of tests are discussed below.

Limitations in Classifying

Content Area. Each of the discrete items in SAT-verbal sections must be put into one of four content areas: aesthetic/philosophical, world of practical affairs, science, or human relationships. As with any classification scheme, there is some ambiguity in how any particular item may be classified. Some items classified as science, for example, are words that are used primarily in a science context; others are more general. A test that meets its science specifications by including only items that are distinctly scientific might be quite different from one that meets its science specifications by including items that are only marginally scientific. These distinctions are lost when all items are forced into four categories. A "general" classification would have helped to ensure that only items that truly fit into a particular content area were put into that category. However, since the SAT is not assembled using a general category, we decided not to use one for this study.

Human Role. This part of the classification scheme seeks to portray the roles in which people are presented in the reading comprehension passages and sentence completion items. The following were used:

- Arts
- Intellectual
- Business/Government
- Science
- Personal Characteristics
- Family/Interpersonal Relationships
- Sports
- Other

These categories worked fairly well except for some sentences and passages using the generic "he." Many of the sentence completions using generic "he" were general in nature and did not fit into the categories we established. Therefore, most generic "he" items fell into the 08—"other"—category. It should be noted that generic "he" has not been allowed in the SAT since the inception of the Test Sensitivity Review process in 1980; prior to that, it was commonly used as a neutral pronoun.

Passage Content Classification. The categories under this heading are the same ones used by SAT item writers and test developers:

- Biological science
- Physical science
- Social studies
- Synthesis
- Humanities
- Narrative
- Argumentative

For our purposes, we broke the argumentative category into four parts—argumentative–science, argumentative–social studies, argumentative–humanities, and argumentative–other—in order to look at the frequency with which these subjects provide the context of the argumentative passages.

Human Content of Passage. These categories, identified in Appendix A, describe the content of a reading comprehension passage in reference to the gender of the human subject(s) of the passage. Passages using generic "he" were sometimes difficult to classify because they might also mention particular individuals or groups of people identified by sex; here, as elsewhere in this study, multiple classifications

were not permitted. In such cases, we decided whether the reference(s) to a particular individual or the use of generic "he" seemed more noticeable in the passage. More often than not, the reference to a particular individual seemed the more important of the two. A passage was classified as using generic "he" primarily when the author used it consistently or when no other classification was possible for the passage. Therefore, the count for Human Content of Passage category 11 (see Appendix A) underestimates the frequency of this usage.

Reading Skill Tested. This division follows the categorization of skills used in assembling the SAT:

- Main idea
- Supporting idea
- Inference
- Application
- Evaluation of logic
- Style and tone

Deciding which reading skill is tapped by a particular item is not always easy. For example, there is sometimes a fine line between an item that tests supporting idea and one that tests inference. When we were in doubt, and where possible, we tried to make our classifications match the specifications for the final test form.

Sex Reference in Reading Comprehension Item. This classification refers to the gender of the person(s) mentioned in a reading comprehension item. Some items fit into more than one of the sex reference categories. An item might, for example, refer to a male and also refer to the author as "he." When this happened we classified the item according to the first reference in the item unless the second reference was more prevalent throughout the item.

Each item in each test form was coded in accordance with the classification scheme. All the classifying was done by two individuals who were trained and closely supervised by the first author until we were sure that their judgments about the classifications were similar to ours. Thereafter, their work was checked periodically. They were asked to confer with an experienced staff member whenever they had a question about classifying a particular item or passage.

Creating the Data Base

A data base for use on an IBM PC/XT was designed and programmed by Systems staff at the Educational Testing Service (ETS). The coding for each form was key-entered into the data base; the information for each form was printed out and checked against the original coding form and discrepancies were resolved. Pilot tabulations of data for limited numbers of forms revealed minor inconsistencies among the data; these were tracked down and corrected. A tabulation of the data for all 153 forms was done, and it is included here as Appendix B.

CHANGES IN SAT-VERBAL TEST SPECIFICATIONS OVER TIME

There have been two important revisions to the specifications for the SAT-verbal sections in the years investigated by this study. The first came about in 1974 as a result of the decision to shorten the SAT so that the Test of Standard Written English could be added; vocabulary and reading comprehension subscores were added at this time. The second revision was the result of the decision in 1978 to add medium length passages to the verbal sections of the SAT. With each revision, an effort was made to preserve the balance among content areas that had been established in 1958 when detailed specifications were adopted to control form-to-form variation in the test. A summary of the three sets of specifications used during the time periods under study is presented in Table 1.

As will be discussed in more detail below, the tests administered from October 1974 to May 1978 included the greatest proportion of items thought to favor females; those administered from January 1961 to April 1974 had the smallest. If this characteristic of test content was all that affected the scores of males and females during these periods, the highest mean scores for females should have occurred from 1974 through 1978 and the lowest from 1961 through 1974; the scores from 1978 to the present should have been somewhere in between. In fact, as illustrated in Figure 1, the mean scores of females in relation to those of males began to decline before 1974 and continued to decline from 1974 to 1978. The mean difference continues to increase.

January 1961–April 1974

The specifications during this period, when SAT forms JSA13–WSA25 were developed, were for a 75-minute, 90-item test. These specifications, the first with detailed content requirements, were adopted in 1958. Each of the tests built to these specifications contains 18 antonyms, 19 analogies, 18 sentence completions, and 35 reading comprehension items based on seven passages. Of the items, 61 percent are discrete and 39 percent are based on passages. All of the discrete items (antonyms, analogies, and sentence completions) were to be classified into one of four content categories: aesthetic/philosophical, world of practical affairs, science, or human relationships. Items that did not seem to fit into any of these categories could be put into a fifth category: general. Test assemblers were strongly encouraged to use this fifth category as little as possible, and, in fact, very few final form items were ever classified "general." The possibility of using items classified as general became more remote with the introduction of the Computer Assisted Assembly of Tests project that began in the late 1960s. The general category was not specified in the procedures for selecting items, and so no item classified as general was picked by the computer. Since the general cat-

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Table 1. SAT-Verbal Specifications: January 1961–June 1987

	Jan. 1961–April 1974	*Oct. 1974–June 1978*	*Oct. 1978–June 1987*
Forms	JSA13–WSA25	WSA3–3ASA2	3ASA3-3JSA0
No. of forms	60	20	73
Time	75 min.	60 min.	60 min.
Total items	90	85	85
No. of antonyms	18	25	25
Aesthetic philos.	4	6	6
Practical affairs	5	6	6
Science	5	7	7
Human relationships	4	6	6
No. of analogies	19	20	20
Aesthetic philos.	5	5	5
Practical affairs	5	5	5
Science	5	5	5
Human relationships	4	5	5
No. of sentence completions	18	15	15
Aesthetic philos.	4	4	4
Practical affairs	5	4	4
Science	5	4	4
Human relationships	4	3	3
No. of passages	7 long	5 long	6 (3 med., 3 long)
Humanities	1	1	1
Social studies	1	1	1
Biological sciences	1	1	1
Physical sciences	1	1	1
Narrative	1	1	1
Argumentative	1	1	1
Synthesis	1	—	—
No. Reading comprehension questions	35	25	25

egory was used so infrequently during this period, it is unlikely that its discontinuance had any effect on test scores.

On the basis of Coffman's work in the late 1950s and early 1960s (Coffman 1957, 1961, 1963), as well as subsequent research by Donlon (1973), Strassberg-Rosenberg and Donlon (1975), and Carlton and Harris (1989), it may be said that discrete items classified as aesthetic/philosophical and human relationships are more likely to favor females than males; items classified as world of practical affairs and science are more likely to favor males than females. These statements are generalizations made about groups of test questions. There can be considerable variation on particular questions: females may do better than males on some world of practical affairs questions, for example, and males may do better than females on some aesthetic/philosophical items. For forms JSA13—WSA25 the number of items specified in the content categories was not equal: 13 aesthetic/philosophical, 12 human relationships, 15 world of practical affairs, and 15 science. The result was that each test contained five more discrete items thought to favor males than discrete items thought to favor females.

During this period, seven passages were used to test reading comprehension: one narrative, one biological science, one physical science, one synthesis, one argumentative, one humanities, and one social studies. (The synthesis passage dealt with the relationship between the sciences and the humanities.) Although neither a minimum nor a maximum length was specified for the individual passages,

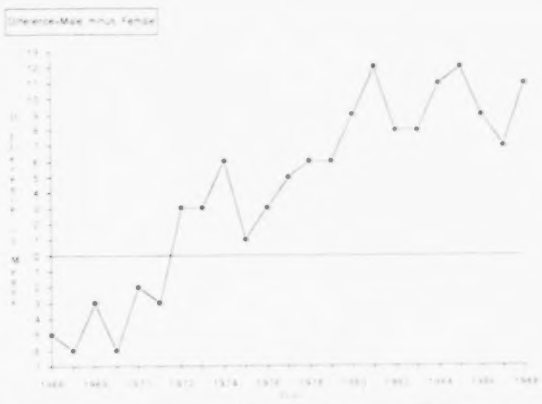

Figure 1. Male/female SAT-verbal score differences—all grades.

the passages together were not to contain more than 3,500 words. Test assemblers during a part of this period were asked to calculate an "S" Index for the reading comprehension passages. Each passage was assigned the number zero, one, or two depending on whether it was oriented toward testing thinking that was primarily scientific, mathematical, and/or analytical. The total test "S" Index was supposed to be between five and six. Test developers interviewed for this study do not remember the "S" Index as a significant factor in test assembly. One suggested that it provided essentially the same information as the content classifications for the reading comprehension passages and was, therefore, redundant. In any case, it apparently was used for only a short period of time.

October 1974–June 1978

Beginning with form WSA3 (October 1974), the SAT was shortened from 3 hours to 2½ hours. The SAT-verbal sections went from 75 minutes and 90 items to 60 minutes and 85 items. The reduction in time, combined with only a slight reduction in the number of items, meant that a different mix of item types had to be used. The proportion of the SAT-verbal sections devoted to the most time-consuming item type, reading comprehension, was reduced, and the proportion devoted to the least time-consuming item type, antonyms, was increased. The new forms of the test contained 25 antonyms, 20 analogies, 15 sentence completions, and 25 reading comprehension items based on five passages, each with five items. Tests with these new specifications contained 60 discrete items (71 percent of the test) and 25 items based on passages (29 percent of the test). Two subscores were also introduced: a vocabulary subscore, made up of the antonym and analogy items, and a reading subscore, made up of the sentence completion and reading comprehension items. This involved a change in the statistical specifications such that test assemblers now had to produce reading and vocabulary subtests that had the same mean and, if possible, the same distribution of item difficulty.

It is interesting to note the shifts in the content categories of the discrete items for forms built during this period. The new specifications called for 15 aesthetic/philosophical items, 14 human relationships items, 15 world of practical affairs items, and 16 science items. The number of discrete items more likely to favor males was only two greater than the number more likely to favor females, compared to five more for males in the previous specifications. In addition, the changes in the reading comprehension passages would appear to favor females. One of the two science passages was dropped; the new specifications called for one science passage, which could be either biological or physical science. The other type of passage that was dropped was synthesis; these were passages that combined the sciences and humanities, typically by discussing the similarities of the two areas. Note that among the 25 antonyms there were 7 science items but only 6 items for each of the other three content categories; the extra item was probably specified to be science in order to make up, in part, for the loss of the science reading passage.

Test development staff recall that the synthesis passage was chosen as one of the two to be dropped because the passages classified as synthesis were rather similar in content (i.e., dealing with the relationship of science and the humanities) and, therefore, rather predictable. In addition, the synthesis passages were often a variation of the argumentative type of passage, thereby duplicating the argumentative portion of the specifications. The decision to drop one of the science passages may have been made on the basis of duplication. The only subject area in the previous specifications that was represented by more than one passage was science; therefore, a science passage seemed the most expendable.

Other characteristics of the reading comprehension passages had been more specifically defined just prior to or at about the same time as these changes in the content specifications. The length of the passages had not been strictly controlled in the 1960s, but before the specifications were changed in 1974, it was established that each passage should be between 375 and 450 words. Reading comprehension passages with content related to a minority group were introduced into the test in the early 1970s. Soon thereafter, it was expected that each final form would have one minority-relevant reading passage.

There was a minor change in the test beginning with form XSA4 (November 1975). When the specifications for the SAT were changed in 1974, the Verbal 1 (V1) section of the test had to fit on four pages in the test book. Because test assemblers consistently had trouble doing this, a change was made in the ordering of the item types. The previous ordering—with items 1–15 antonym, 16–25 sentence completion, 26–35 analogy, and 36–45 reading comprehension—was changed to items 1–15 antonym, 16–20 sentence completion, 21–30 reading comprehension, 31–35 sentence completion, and 36–45 analogy. Then, in order to avoid a test in which both sections ended with the same item type and therefore with items from the same subscore, the ordering of the Verbal 2 (V2) section was changed from items 1–10 antonym, 11–25 reading comprehension, 26–30 sentence completion, and 31–40 analogy to items 1–10 antonym, 11–15 sentence completion, 16–25 analogy, and 26–40 reading comprehension. The shifts in the pattern of ordering items is readily apparent in the charts in Appendix C.

October 1978–June 1987

The most recent major change in the test specifications occurred with form 3ASA3, when medium length reading passages were introduced into the test. Specifications were changed to call for three long and three medium length passages per final form. The long passages, which contain 375

to 450 words, have five items; the medium passages, which contain between 175 and 275 words, can have from two to four items. The V1 section was to have two long passages, and V2 was to have three medium passages and one long passage.

Since the new specifications called for six passages rather than five, one of the two types of passages that had been deleted in 1974 needed to be returned to the test. Because of the previous objections to the synthesis passage, the decision was to add a science passage to the test. New forms of the test contained both a biological and a physical science passage. The number of science-related reading comprehension questions increased from five to a total of seven to nine across the two passages. But while the post-1978 forms of the test have had fewer science reading comprehension items than tests assembled during the 1961-to-1974 period, it should be noted that the new forms may also contain fewer items based on narrative and humanities passages (passages on which females may outperform males) than the earlier forms. This can happen if the test assembler picks a medium length rather than a long narrative or humanities passage. No changes were made in the specifications for the discrete items in 1978.

The most recent change in the test, a minor one, first occurred in form 3ISA01 (January 1986). Pages were added to the SAT test booklet, and the V1 section was increased from four to six pages. This change made it possible to reorder the item types in V1 so that the sentence completion items were not split up. The new ordering for the V1 section became 1–15 antonym, 16–25 sentence completion, 26–35 reading comprehension, and 36–45 analogy. No other changes were made in the test at this time.

Summary

The shifts in the content of the SAT-verbal sections that are worth studying in more detail are those that occurred in 1974 and again in 1978. In 1974, a greater proportion of the test was devoted to the discrete item types, subscores were introduced (this called for the same average difficulty for items making up the vocabulary and the reading subscores), and a better balance was achieved between the content areas likely to favor males and those likely to favor females. In 1978, medium length passages were introduced, and a second science reading passage was once again included in the test.

Although not constituting a change in the SAT specifications per se, the promulgation of the *ETS Test Sensitivity Review Process* guidelines (Hunter and Slaughter 1980) had a marked impact on the gender questions being examined in this study.[1] These formal guidelines replaced informal "minority review" guidelines that had been applied to the SAT for some time prior to 1980. The purpose of the Test Sensitivity Review is to ensure that the test contains (1) questions recognizing the varied contributions that females and members of minority groups have made to our society and (2) no inappropriate or offensive materials.

CHANGES IN THE CONTENT OF THE SAT

This section of the study will present information, broken into five time periods, about the actual distribution of content within the SAT. The content categories used to classify the items and passages have been described above. Because the trend in the relationship of the average scores of women and men has been continuous, we chose to use time periods of common length rather than some other means of dividing the set of forms to be analyzed. Each time period covers the test forms introduced during five testing years, i.e., from the October administration of one calendar year through the June administration of the next. The only exception is the earliest period, which includes all test forms introduced between January 1961 and June 1967. Because the number of forms introduced in each period varies considerably, proportions are used to allow comparison of the representations of the several content areas. Table 2 gives the number of forms in each time period. The expansion in the number of forms introduced into the program in recent years reflects the impact of test disclosure legislation and College Board policy changes effective in January 1980.

Reading Comprehension

As described above in the section on changes in test specifications, there have been changes in the number of reading passages in each test. There were seven passages prior to 1974, five in the period from 1974 to 1978, and six subsequently. The basic content categories remained the same throughout the period, with the exception of the synthesis category, which was dropped in 1974. Table 3 shows the proportion of passages from each content classification for each time period.

The principal change that can be observed is the dropping of the synthesis passage in 1974. The representation of each of the other types changed from 1 in 7 (14 percent) in the earliest period studied to 1 in 6 (17 percent) in the post-1978 period. There has been no change in the relative proportions of the six types of passages that have been included in the test throughout the years studied, with the exception of the drop in the number of physical science passages during the period 1974–78, when only five passages were included in the test.

Because items based on passages about science are presumed to favor men and those based on passages about humanities are presumed to favor women, in Table 4 we distributed the argumentative passages according to the

1. This original set of guidelines has been reviewed periodically and revised and their application broadened. The current guidelines are described in *ETS Sensitivity Review Process: An Overview* (Princeton, N.J.: Educational Testing Service, 1987).

Table 2. Number of Test Forms Introduced by Time Period

Period	1961–1967	1967–1972	1972–1977	1977–1982	1982–1987
No. of forms	23	24	24	34	43

Table 3. Percentage of Reading Passages in Each Content Category

No. of passages	*1961–67* *161*	*1967–72* *169*	*1972–77* *136*	*1977–82* *200*	*1982–87* *258*
Biological science	14%	14%	18%	17%	17%
Physical science	14	14	6	15	17
Social studies	14	14	18	17	17
Humanities	14	14	17	17	16
Narrative	14	14	18	17	17
Argumentative	15	17	19	17	17
Synthesis	13	14	5	0	0

Table 4. Percentage of Reading Passages in Each Combined Content Category

No. of passages	*1961–67* *161*	*1967–72* *169*	*1972–77* *136*	*1977–82* *200*	*1982–87* *258*
Science	32%[a]	30%	29%	35%	36%
Social studies	22	23	25	21	22
Humanities	19	20	24	27	24
Humanities and narrative	33	34	41	44	41

a. The percentages do not total 100 because in the earlier years the synthesis passages are not included, and in the 1977–1987 period there were five argumentative passages that could not be classified as science, social studies, or humanities/narrative; one in the 1977–82 column and four in the 1982–87 column.

subject of the argument and combined them with the passages explicitly categorized as science, humanities, or social studies.

These data confirm the consistent pattern of a 3:2 ratio between science and humanities passages throughout all the periods. However, if, as shown in the last line of Table 4, the narrative passages (drawn from novels, short stories, biographies, and essays) are also considered to be drawn from the humanities, humanistic content has had equal or slightly greater representation in the test compared with content drawn from the domain of science.

As described above in the section on classification, six different aspects of reading are tested in relation to the reading comprehension passages in the SAT. As can be seen in Table 5, only minor changes have occurred in the relative proportions of questions drawing on these six skills. The only visible change is a small increase in the proportion of main idea questions and a corresponding decrease in inference questions, although inference continues to be the dominant skill tested by the reading comprehension items.

Discrete Item Types

As described above, the same four content categories (i.e., aesthetic/philosophical, world of practical affairs, science, human relationships) are used for the three types of discrete items: antonyms, analogies, and sentence completions. The proportion of items in each content category is shown in Tables 6 through 9 for each of the five time periods included in the analysis.

In general, the proportion of antonyms classified in each content category has been quite consistent over the entire period of the study. There appears to have been a slight decrease in the proportion of items that can be classified as world of practical affairs. This is balanced by a small increase in the proportion classified as human relationships.

As with antonyms, the distribution of content categories within analogies shows very little variation over the years being studied. There has been a very small decline in the proportion of items classified as science and a corresponding increase in the human relationships category.

Table 5. Percentage Distribution of Questions by Reading Skills

	1961–67	*1967–72*	*1972–77*	*1977–82*	*1982–87*
Main idea	12%	14%	16%	15%	16%
Supporting idea	25	20	24	25	26
Inference	39	40	37	36	35
Application	9	8	8	8	8
Evaluation of logic	8	7	8	10	7
Style and tone	7	10	8	7	7

Table 6. Content Distribution in Percentages for Antonyms

No. of items	*1961–67* *414*	*1967–72* *432*	*1972–77* *544*	*1977–82* *848*	*1982–87* *1075*
Aesthetic philos.	23%	23%	23%	24%	23%
Practical affairs	28	28	27	25	24
Science	28	28	26	26	27
Human relationships	22	22	23	25	26

Table 7. Content Distribution in Percentages for Analogies

No. of items	*1961–67* *437*	*1967–72* *456*	*1972–77* *472*	*1977–82* *680*	*1982–87* *860*
Aesthetic/philos.	26%	27%	26%	25%	25%
Practical affairs	27	27	27	26	27
Science	27	26	25	25	24
Human relationships	21	20	22	24	22

Table 8. Content Distribution in Percentages for Sentence Completion Items

	1961–67	1967–72	1972–77	1977–82	1982–87
No. of items	*414*	*432*	*384*	*510*	*645*
Aesthetic/philos.	23%	22%	25%	27%	27%
Practical affairs	27	28	28	27	27
Science	27	27	27	27	27
Human relationships	23	23	21	20	21

Table 9. Content Distribution in Percentages for All Discrete Items

	1961–67	1967–72	1972–77	1977–82	1982–87
No. of items	*1265*	*1320*	*1400*	*2038*	*2580*
Aesthetic/philos.	24%	24%	25%	25%	25%
Practical affairs	27	28	27	26	26
Science	27	27	26	26	26
Human relationships	22	21	22	23	24

Again, there were no sizable shifts in the proportion of sentence completion items classified in each of the content categories. A modest increase in the number of aesthetic/philosophical items was balanced by a decline in human relationships items.

When the distribution of items classified by content is examined for all discrete items that appeared in the SAT, a picture of stability is seen. The relative proportions of science and world of practical affairs items have decreased slightly, while the aesthetic/philosophical and human relationships categories have undergone corresponding small increases.

Overall, the analyses of the content distribution for the four item types in the SAT-verbal sections confirm that the tests correspond to the specifications and that only minor changes can be observed from these data. The principal change was the elimination of the synthesis reading passage and related questions in 1974.

GENDER REPRESENTATION AND BALANCE IN THE SAT-VERBAL SECTIONS

Although the SAT data base provides a means of exploring many questions regarding the nature of the test in relationship to other phenomena, we have chosen to look at the history of SAT items for the past 27 years from the perspective of the relative roles of men and women and the relative occurrence of male- or female-linked language within the test. In this section we first present some observations that are based on the occurrence of certain item characteristics during the 1960–1987 period as a whole; these observations are followed by an examination of changes in the balance of male and female language and representations in the same five time periods used above to study changes in the content of the test.

The antonym item type is not discussed here, because the occurrence of sex-linked words was so rare that a decision was made not to include this category in the coding of the items.

Gender Representation in 1961–1987

The occurrence of gender-related words, topics, or human roles in the 153 forms introduced during these years is described by item type in Tables 10 through 13.

Discrete Item Types

As Table 10 shows, 73 percent of the 3,000 analogies did not have nouns that referred to people. An additional 18 percent used gender-neutral words (e.g., student, employee). Of the remaining 279 analogies that used gender-linked words, 38 items used male-specific words (e.g., monk) and 11 used female-specific words (e.g., duchess); 6 items included both male-specific and female-specific words. There were other items that, while having no necessary sex link, were judged as likely to be perceived as either male or female (e.g., captain, nurse). Thirty-five such items were judged likely to be perceived as male, none as female. Other items included a combination of nouns that referred to people: 138 were judged to be male-oriented, 20 were judged to be female-oriented, and 31 combined male and female references. If we combine all items with either male-specific, male-perceived, or male-oriented language, there were 211 "male" items (7 percent); similar addition shows a total of 31 (1 percent) "female" items, with a total of 37 (1.2 percent) items referencing both sexes. Thus, candidates taking the SAT during the 1960–1987 period have found a female-related word in over 2 percent of the items while finding a male-related word in over 8 percent of the items.

Male-oriented language is prevalent in analogies in certain content categories. Among the 768 aesthetic/philosophical analogies, candidates found a male-related word over 10 percent of the time but a female-related word less than 3 percent of the time; similar percentages were found among the 806 world of practical affairs analogies. In the

Table 10. Gender References in Analogies 1961–1987

	Neutral/Both	Female	Male
No human reference	2,194		
Gender-neutral	527		
Gender-specific	6	11	38
Perceived gender		0	35
Gender-oriented	31	20	138
Total	2,752	31	211

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Table 11. Gender References in Sentence Completions 1961–1987

	Neutral/Both	*Female*	*Male*
No human reference	704		
Gender-neutral	979		
Gender-related	35	171	586
Total	1,718	171	586

science category there are few person-related words, but, with the exception of one item, such person-related words are all male-related. In human relations analogies the differences are the smallest; male-related words occur only about two and a half times as often as female-related.

Table 11 shows that out of 2,475 sentence completion items, 28 percent have no human representation and 40 percent use neutral language. Of the remaining 793 items, 586 (24 percent) are male-related (including the use of generic "he"), 171 (7 percent) are female-related, and 35 (1+ percent) refer to both sexes. Again, if we look at content categories, there are sharp contrasts. Among the 617 aesthetic/philosophical items, men were represented 29 percent of the time, while women appeared in 9 percent of the sentences; for the 676 world of practical affairs items, men appeared in 16 percent of the sentences and women in 6 percent. Sixteen percent of the 664 science sentences had male references, in contrast to less than 4 percent with references to women. Women appeared in 12 percent of the human relationships items; men appeared in 39 percent.

Reading Comprehension

Of the 960 reading comprehension passages, 291 do not mention specific persons, although they may include general references to "humans" or "scientists," for example. Another 37 passages refer to a person or group of people but without any identification of their sex. Four hundred passages are classified as relating to males; in addition, 119 use the generic pronoun "he." It is important to note that 222 of the 400 "male" passages do not have a person as the subject of the passage but do mention a man (e.g., a passage about astronomy that mentions Kepler). Forty-three passages are classified as relating to females; 10 of these passages do not have a woman as the subject but do mention a woman. Seventy passages include both males and females. Thus, candidates have found 470 (49 percent) of the passages to include a male referent, while finding only 113 passages (12 percent) that refer to women. There are some sharp contrasts among the seven broad content categories that have been used during the years under study. These differences among the types of passages are shown in Table 12.

Of the 4,425 items associated with the reading comprehension passages, 1,120 (25 percent) refer to males or to the author as "he"; in addition, 236 (5 percent) use the generic pronoun "he." There are 116 questions (<3 percent) referring to females and 3 that refer to the author as "she." There are 164 questions (4 percent) that refer to both men and women. Thus, there are more than four times as many items that include a reference to males as those that include a reference to females. If the questions with the generic pronoun "he" are included, the ratio is greater than 5 to 1. Table 13 shows the distribution of gender references by content area among the reading comprehension questions.

Trends in Gender Representation

In analyzing changes over time in gender-linked language and in the representation of women and men in the test, we worked with the same five-year blocks used in the analysis of changes in the distribution of content. Again, because of the variation in the number of items among the several time periods, percentages are shown in the tables that follow.

Analogies

Analogy items were classified into five groups: those that made no human reference are labeled "no human"; those that used a gender-neutral term (e.g., teacher) are labeled "neutral"; and those that used male-specific, male-linked, or male-oriented language are labeled "male." The parallel categories for women are labeled "female." Those items that included language pertaining to both men and women are labeled "both." The percentage of items in each category is shown in Table 14 by time period. The proportion of the total set of analogies that contained a gender reference (i.e., the sum of male, female, and both) is shown in the last line of the table.

Table 12. Gender References in Reading Comprehension Passages 1961–1987

	Biological Science	*Physical Science*	*Social Studies*	*Humanities*	*Narrative*	*Argumentative*	*Synthesis*	*Total Passages*
No. of passages	151	132	153	151	154	164	55	960
No human reference	100	81	30	25	2	51	2	291
No gender identified	1	1	13	4	7	8	3	37
Male	28	43	75	79	95	60	20	400
Female	5	1	5	12	17	3	0	43
Both	4	0	12	11	33	8	2	70
Generic "he"	13	6	18	20	0	34	28	119

Table 13. Gender References in Reading Comprehension Questions 1961–1987

	Biological Science	*Physical Science*	*Social Studies*	*Humanities*	*Narrative*	*Argumentative*	*Synthesis*	*Total*
No. of questions	697	602	722	700	682	748	274	4,425
No gender reference	615	498	484	392	129	525	143	2,786
Male	59	87	181	215	370	155	53	1,120
Female	3	4	9	31	63	9	0	119
Both	2	1	19	16	114	11	1	164
Generic "he"	18	12	29	46	6	48	77	236

Table 14. Gender References in Analogy Items 1961–1987

	1961–1967	*1967–1972*	*1972–1977*	*1977–1982*	*1982–1987*
Total no. items	*437*	*456*	*472*	*680*	*860*
No human reference	72%	70%	73%	74%	74%
Neutral	16	15	15	19	21
Male	8	13	8	6	4
Female	2	1	1	1	1
Both	3	1	2	<1	1
Percent with gender (total)	12.4%	15.1%	11.7%	6.8%	5.2%

Table 15. Gender References in Sentence Completion Items 1961–1987

	1961–1967	*1967–1972*	*1972–1977*	*1977–1982*	*1982–1987*
Total no. items	*414*	*432*	*384*	*510*	*645*
No humans	36%	30%	26%	27%	25%
Neutral	36	39	39	44	40
Male	14	17	22	17	18
Female	1	1	3	10	16
Both	1	1	1	2	1
Generic "he"	12	12	8	1	0
Percent with gender (total)	28.5%	30.8%	34.9%	29.6%	35.7%

Relatively few analogy items contained language that is linked to one or the other sex. The proportion of items with gender-related words has declined substantially over the entire period of this study so that in recent forms only about 1 item in 20 has language that is gender related. Of those few gender-related items, 3 out of every 4 use a male-related word. There has been modest growth in the proportion of items with no human reference as well as in the proportion of items that use gender-neutral language.

Sentence Completions

The categories used to classify the sentence completion items are the same as those used for analogies, with the addition of a generic "he" category for those sentences that used "he" as a general referent for a person.

It is clear from the data in Table 15 that a considerable change has occurred among sentence completion items in the frequency with which females are represented and in the elimination of generic "he."[2] Because the sentence completion item type tests a candidate's ability to recognize relationships among parts of a sentence and to deal with the logic of words in the context of a sentence, it is not tied to particular content knowledge. Consequently, the surface content of the sentences can be controlled to eliminate the use of generic "he" and to increase the proportion of times the subject of the sentence, for example, is a woman. In the process of eliminating the generic "he" and increasing the representation of women, there has been an increase in the overall proportion of items that include persons.

Reading Comprehension Passages

Reading passages are chosen to fit the specification categories described above (i.e., biological science, physical science, social studies, humanities, narrative, argumentative, and—until 1974—synthesis). They are taken from sources that few if any high school students are likely to have read, so that the response in the testing situation is to unfamiliar material. A passage may be edited to allow it

2. The promulgation of the *ETS Test Sensitivity Review Process* in 1980 prohibited the use of "he" as a generic reference to a human. The impact of this guideline can be observed in the reading comprehension passages and questions as well as in the sentence completion item type.

Table 16. Gender References in Reading Comprehension Passages 1961–1987

	1961–1967	*1967–1972*	*1972–1977*	*1977–1982*	*1982–1987*
Total no. passages	*161*	*169*	*136*	*200*	*258*
No specific persons	24%	18%	21%	37%	42%
No gender identified	4	3	4	5	4
Male	41	44	41	44	39
Female	2	2	6	6	6
Both	4	5	10	7	9
Generic "he"	24	27	18	2	0
Percent with gender (total)	75.8%	81.7%	78.7%	63.0%	57.8%

Table 17. Gender References in Reading Comprehension Questions 1961–1987

	1961–1967	*1967–1972*	*1972–1977*	*1977–1982*	*1982–1987*
Total no. items	*840*	*805*	*680*	*850*	*1,075*
No gender reference	62%	54%	57%	67%	72%
Male	26	28	29	25	20
Female	1	1	3	4	4
Both	4	4	4	4	3
Generic "he"	8	13	7	1	0
Percent with gender (total)	38.3%	45.7%	43.2%	33.3%	28.0%

to stand alone and to make sure that it contains all the information needed to answer the questions. Within the specified content areas there is considerable latitude in the type of reading material chosen and, consequently, in the human references, if any, included. For this analysis, the passages were classified into those that do not mention any specific person, those that mention a person not identified by sex, those primarily about a male (or males), and those primarily about a female (or females), those about both men and women, and those that use generic "he."

Several trends can be observed in the data in Table 16. The use of generic "he" was eliminated with the advent of the sensitivity review guidelines. This was offset by a substantial increase in the proportion of passages that do not mention specific people and by modest increases in the proportion of passages about women or about both men and women. The proportion of passages that are primarily about a man or men has remained quite consistent over time.

Reading Comprehension Questions

The frequency of gender references in reading comprehension questions is, of necessity, limited by the nature of the passages. Further, not all questions about passages that mention specific people refer to the person or persons in the passages. Thus, the first category in this analysis is for items that contain no reference to either males or females. The male category includes both references to one or more males and references to the author as "he." The female category includes references to one or more females and to the author as "she." A separate category includes items that refer to both men and women, while the generic "he" category is for items that use the pronoun "he" for both sexes.

The trends observable in Table 17 are similar to those seen in the data about reading comprehension passages. The use of the generic "he" has been eliminated, and there has been an increase in the proportion of items with no reference to a person or persons identified by gender. There has been a small decrease in the proportion of questions referring to males, accompanied by a modest increase in the proportion of female-related questions.

SUMMARY

This study has created a detailed history of the content of the SAT-verbal test over the past two and a half decades. That history has been used to examine changes that have occurred over that time in the content of the test and in the balance of references to and representations of women and men within the content of the test.

Changes in Content

Although there have been some changes in the timing, length, and structure of the test during the years under consideration, the actual tests have adhered closely to the rather stable content specifications, and there have been comparatively few changes in the content of the test. The most obvious change was the elimination of the synthesis reading passage from the reading comprehension section in 1974. Apart from that, the relative proportions of the other six types of reading passages have been constant, with the exception of a drop in the number of physical science passages during the four-year period 1974–78 when only five

passages were included in the test. The relative balance between science content (physical and biological combined) and humanistic content (humanities and narrative combined) has remained quite consistent over the years under study.

The relative distribution of content among discrete items has been very stable. The only observable change has been a slight decrease in the number of science and world of practical affairs items and a corresponding increase in the number of aesthetic/philosophical and human relationships items.

Gender Representation

SAT candidates during the 1960–1987 period encountered women subjects or female-related language only rarely. Nevertheless, the trend information shows a number of changes in the direction of reducing the disparity between male and female language. At the same time, there is still sufficient disparity observed in recent forms of the test to suggest that it may be possible to bring about additional change in the years ahead.

The most obvious change has been the elimination throughout the test of "he" as a generic pronoun. Other changes that can be observed include the following:

- Among analogy items there has been a substantial decline in the proportion of items with gender-related words. Of those few gender-related items, 3 out of 4 use a male-related word.
- Sentence completion items in the last five years reflect parity in the portrayal of men and women; this is a radical change from the test forms of the 1960s, when men appeared 10 times more frequently than did women. In the process of eliminating the generic "he" and increasing the representation of women, there has been an increase in the overall proportion of items that include humans.
- The proportion of reading comprehension passages (and the related questions) that are primarily about a man or men has remained quite consistent throughout the entire period included in this study. There have been modest increases in the proportion of passages about women or about both men and women. Concomitantly, there has been a substantial increase in the proportion of passages that do not mention specific people. These changes have reduced the disparity between the number of references to men and the number of references to women. Even in the most recent five-year period, 48 percent of the passages made reference to men while 15 percent referred to women. The issue of what an appropriate level of male and female representation should be is still an open one, although the changes in recent years suggest that a greater representation of women may be possible.

DISCUSSION

This comprehensive analysis and history of the content of the SAT-verbal test since 1960 indicate that while there have been some changes in the structure of the test, none of the changes appear to affect the basic balance of content between those areas thought to favor women and those thought to favor men. The changes in content described here do not support the hypothesis that the declining level of women's performance on the verbal sections of the SAT, when compared with the performance of men, is a result of changes in the content of the test. Although the ratio of male to female references has been reduced in recent years, the analysis of gender references indicates that throughout the period under study the test has had a preponderance of male-oriented language and references. Much of this reflects the topics and activities that have entered into the language and into the published writing that serves as the source of passages used in the testing of reading comprehension. There is no obvious external criterion for judging whether the observed proportions of female and male references in the test are appropriate. Although there are important social reasons for seeking a more balanced selection of language and reading passages, it is not clear whether the imbalance affects performance levels. Even though the male–female reference ratios on the SAT-verbal sections have been reduced in recent years, the trend for women to score lower than men has not been reversed. We do not know whether a more balanced use of gender-linked language or the use of more reading passages about women will have an impact on the relative performance levels on the test of women and men. The evidence is mixed. In their study of the content of certain achievement tests used in grades 1 through 12, Donlon, Ekstrom, and Lockheed (1977) found significant correlation coefficients between content factors and sex differences in percent passing an item. They observed that "it seems likely that there *are* relationships between content factors and sex differences in item success. The general level of these coefficients is quite low . . ." (Donlon, Ekstrom, and Lockheed 1977, p. 51). They did find a consistent pattern of correlations "indicating that the more female references there are in the item, the greater the relative success of females on that item" (p. 51). Although concluding that there is a "tendency for females to do relatively better on items that contained female references," they did caution that "the results are too weak and irregular to posit a practical relationship" (Donlon, Ekstrom, and Lockheed 1977, pp. 81, 51). The need for caution in claiming a relationship between content and sex-different performance is also supported by research relating to reading comprehension, a key element of SAT-verbal sections. Scott's 1986 review of previous research concluded that the "results are inconclusive regarding the effects of gender-related characteristics on pupils' comprehension" (p. 106). In a similar vein, Schau and Scott concluded:

> The research review of the effects of gender characteristics of instructional materials shows no consistent patterns regarding the relationship of comprehension to the sex and role of the characters portrayed. Some studies support a cognitive consistency model and report that comprehension is better when the information presented is consistent with cultural sex stereotypes. Others support a cognitive inconsistency model and report better comprehension when the information is presented in sex-equitable ways. Still others report no differences in comprehension based on the materials' gender characteristics. (Schau and Scott 1984, p. 190)

Scott's own 1986 research found no difference in student comprehension between narratives with traditional and narratives with nontraditional portrayals of men and women, but she did conclude that females *liked* the narratives with traditional female content better than those with traditional male content. Scott concluded that the use of gender-fair materials would not diminish the reading comprehension performance of students (Scott 1986, pp. 113–15).

Similarly, it is not clear that seeking content of greater interest to women would have a significant impact on performance levels. While there is research that indicates topic interest does affect the level of reading comprehension, the same research indicates that the effect is greater for boys (Baldwin, Peleg-Bruckner, and McClintock 1985; Asher and Markell 1974). The same research suggests that prior knowledge about a topic has a greater effect on girls—yet there is no way to judge the likelihood that any group of SAT candidates may be familiar with a particular topic. The specifications call for reading passages from different content areas on the assumption that all candidates will find some topics in which they are interested or have some background familiarity, without assuming that all candidates will be equally interested in or familiar with every topic.

Carlton and Harris (1989) used the recently implemented DIF statistic (Holland and Thayer 1986; Schmitt and Dorans 1987) to explore gender differences on sentence completion and reading comprehension items that included references to men or women. They concluded that "women, when compared with matched men, did significantly better when people were referred to than if there was no reference to people. . . . Who is named or referred to does not seem to matter much; what does matter in female performance is the presence or absence of people" (Carlton and Harris 1989, p. 41).

The controversy over the decline in the SAT-verbal scores of females relative to males has created interest in features of the test that may operate differently for females than for males. This study has pointed out the changes in test content from 1961–1987 and has examined patterns of gender references in the test over the same period. Further research and analysis need to be done to integrate the results of this study with other information about male–female course-taking patterns, test performance, socioeconomic background, and similar characteristics. In addition, research is needed to help determine what an appropriate mix of gender references on the examination might be. Such information can guide decisions regarding the mix of factors that should be controlled to provide equitable measurement of the abilities of all SAT candidates.

APPENDIX A. CLASSIFICATION CODES

General Comments

- No human representation or minority content in antonym
- Sex references apply only to humans—not to animals.
- In antonyms and analogies, if stem and key suggest different content categories, use the stem.

Item Type (for all items)

1 Antonym
2 Analogy
3 Sentence completion
4 Reading comprehension

Delta (for all item types)

Exact final form equated delta

Content Area (for antonyms, analogies, and sentence completions only)

1 Aesthetic/philosophical (art, architecture, literature, drama, music, religion, philosophy, etc.; in antonym, words like "harmony" and sound words; in analogy, animal and character traits)
2 World of practical affairs (economics, politics, government, transportation, communications, sports, etc.)
3 Science (agriculture, engineering, medicine, weather, manual arts, inventions, geography, psychology, etc.; size, volume, physical appearance of things)
4 Human relationships (interpersonal relationships, character analysis, human emotions, family, homemaking, etc.)

Sex-Specific Words (for analogies only)

This category is used to distinguish between analogies that contain nouns referring to people and those that do not. Decide, with help from a dictionary if necessary, if a noun is specific to males or females. If the dictionary lists at least one definition that is *not* sex-specific, the word should be a category 4 or 5. If the word ends in "man" or "woman," it is considered sex-specific. If an apparently neutral word is paired with a word that indicates that only one sex is being thought of, consider it sex-specific. If, in contemporary usage, a word can apply to both sexes, do not consider it sex-specific (e.g., "actor," "captain," "farmer"). If the stem and options belong to more than one category, the item should be classified as a 7, 8, or 9.

1 Male (monk:loneliness, magnate:businessman, prophet:beard)
2 Female (peasant:duchess, ingenue:sporting, matriarchy:woman)
3 Both (contains at least one male and one female stem and/or option)
4 No *necessary* sex link, but likely to be perceived as male (uniform:soldier, captain:crew)
5 No *necessary* sex link, but likely to be perceived as female (hospital:nurse)
6 Neutral (teacher:student, poet:verse, employee:wages)
7 Male-oriented—combines 1, 4, 6
8 Female-oriented—combines 2, 5, 6
9 Combines male and female references
0 No human reference

Stimulus—Number of lines (for sentence completions only)

1 Two or fewer lines
2 Three lines
3 Four or more lines

Human Representation (for sentence completions only)

If a sentence combines two kinds of references, the most specific reference takes precedence—"she and her friends" is a 2, not a 7.

1 Particular male(s) (Shakespeare; Mr. Jones and Mr. Brown; he)
2 Particular female(s) (Cleopatra; Ms. Smith and Ms. Sanchez; she)
3 Mix of males and females (Jane and her brother)
4 Males in general (the soldiers in the Roman army)
5 Females in general (women college professors)
6 An individual(s), sex unspecified (the author)
7 Group, sex unspecified (scientists, we, Americans, children)
8 Generic he—use of male noun or pronoun when both males and females are being referred to (mankind, man, etc.)
0 No human beings referred to

Minority Relevant (for sentence completions and reading comprehension passages)

1 Black American
2 Hispanic American
3 Asian American
4 Native American
5 Other—Third World Countries (Africa, South America, India, etc.)
6 Combination of one or more of the above groups
7 General—civil rights, poverty, immigration, etc.
0 No minority content

Human Role (for sentence completions and reading comprehension passages)

This is for material in which people identified by sex are presented.
Non-sex-specific groups of people are classified 0.

The arts—creating or performing art, music, literature, dance, etc.

01 Male
11 Female
21 Both

Intellectual—professor, critic, world of ideas, etc.

02 Male
12 Female
22 Both

Business or government—executive, supervisor, political candidate; elected official, etc.

03 Male
13 Female
23 Both

Science—researchers, science professors, science writers, etc.

04 Male
14 Female
24 Both

Personal characteristics—people described by the way they look, act, feel

05 Male
15 Female
25 Both

Family or interpersonal relationships—people presented in relation to their families

06 Male
16 Female
26 Both

Sports—participant, spectator, coach, etc.

07 Male
17 Female
27 Both

Other

08 Male
18 Female
28 Both

0 Not applicable (people not mentioned or groups of people cannot be identified according to sex)

Passage Content Classification

1 Biological science (botany, ornithology, zoology, medicine, psychology, etc.)
2 Physical science (chemistry, astronomy, physics, photography, etc.)
3 Social studies (history, economics, sociology, government, etc.)
4 Humanities (art, literature, folklore, music, philosophy, etc.)
5 Narrative (novels, short stories, biographies, essays involving characterization, etc.)
6 Argumentative–science (the representation of a definite bias on a science-related topic)
7 Argumentative–social studies (the representation of a definite bias on a social-studies-related topic)
8 Argumentative–humanities (the representation of a definite bias on a humanities-related topic)
9 Argumentative–other (the representation of a definite bias on a topic other than 6, 7, or 8 above)
10 Synthesis (a combination of the sciences and the humanities)

Passage Length

1 Short: fewer than 20 lines; probably 2 questions
2 Medium: approximately 20–35 lines; 2–4 questions
3 Long: approximately 40–60 lines; 5 questions

Passage Number of Lines

Exact line count

Passage Number of Items

Exact item count

Human Content of Passage (for reading comprehension passages only)

1 Passage primarily about a particular male or a group of males and mentions only males
2 Passage primarily about a particular male or a group of males but mentions (a) female(s)
3 Passage primarily about a particular female or a group of females and mentions only females
4 Passage primarily about a particular female or a group of females but mentions (a) male(s)
5 Passage not primarily about a person but mentions one or more particular males
6 Passage not primarily about a person but mentions one or more particular female(s)
7 Passage not primarily about a person but mentions both male(s) and female(s)
8 Passage about groups of people (writers, scientists, human beings, children, etc.) but does not identify individuals by sex
9 Passage about groups of men and women identified by sex
10 Passage about individual men and women identified by sex
11 Passage uses generic "he" (male noun/pronoun

when both males and females are referred to)
12 Passage primarily about a person not identified by sex or whose sex is established in the questions only
13 Passage about people not identified by sex but mentions one or more males
14 Miscellaneous
Ø Passage does not mention any specific people, although it may occasionally mention "humans," "scientists," etc.

Reading Skill Tested (for reading comprehension items only)

1 Main idea (statement of main idea, purpose, best title)
2 Supporting idea (restatement of facts or supporting idea stated directly in the passage)
3 Inference (an inference based on information given in the passage)
4 Application (apply information given in the passage to outside situations not covered in the passage)
5 Evaluation of logic (analysis of author's arguments, logic, techniques, or organization of material)
6 Style and tone (questions concerning style, tone, or attitude)

Sex Reference in Reading Comprehension Item

Item (stem *or* options) contains at least one reference to a male or female mentioned in the passage.

1 Item refers to male.
2 Item refers to female.
3 Item refers to both.
4 Item refers to author as he.
5 Item refers to author as she.
6 Item uses generic "he."
Ø Item contains no references to males or females mentioned in the passage. Items mentioning the author (when no sex is indicated) or non-sex-specific groups are classified Ø.

Minority Reference in Reading Comprehension Item

Item (stem *or* options) contains at least one reference to minority group member. This is for people only.

1 Item refers to one or more minority group members.
Ø Item does not refer to a minority group member.

NOT or EXCEPT Reading Comprehension Stem

1 Item uses negative stem—NOT, LEAST, EXCEPT.
Ø Item does not use negative stem.

Roman Numeral Reading Comprehension Format

1 Item uses Roman numeral format.
Ø Item does not use Roman numeral format.

APPENDIX B. SUMMARY REPORT: OCTOBER 1960 TO JUNE 1987

Form code: JSA13	First test date: Jan. 1961
Form code: JSA23	First test date: Feb. 1961
Form code: JSA35	First test date: March 1961
Form code: JSA43	First test date: May 1961
Form code: JSA55	First test date: Dec. 1961
Form code: KSA15	First test date: Jan. 1962
Form code: KSA25	First test date: March 1962
Form code: KSA33	First test date: May 1962
Form code: KSA45	First test date: Dec. 1962
Form code: LSA13	First test date: Jan. 1963
Form code: LSA25	First test date: March 1963
Form code: LSA33	First test date: May 1963
Form code: LSA45	First test date: Dec. 1963
Form code: MSA13	First test date: Jan. 1964
Form code: MSA23	First test date: March 1964
Form code: MSA33	First test date: May 1964
Form code: MSA45	First test date: Dec. 1964
Form code: NSA15	First test date: Jan. 1965
Form code: NSA25	First test date: March 1965
Form code: NSA33	First test date: May 1965
Form code: NSA45	First test date: Dec. 1965
Form code: OSA13	First test date: Jan. 1966
Form code: OSA25	First test date: March 1966
Form code: OSA35	First test date: May 1966
Form code: OSA43	First test date: Dec. 1966
Form code: PSA13	First test date: Jan. 1967
Form code: PSA23	First test date: March 1967
Form code: PSA35	First test date: May 1967
Form code: PSA43	First test date: Dec. 1967
Form code: QSA15	First test date: Jan. 1968
Form code: QSA25	First test date: March 1968
Form code: QSA33	First test date: May 1968
Form code: QSA43	First test date: Nov. 1968
Form code: QSA55	First test date: Dec. 1968
Form code: RSA15	First test date: Jan. 1969
Form code: RSA23	First test date: March 1969
Form code: RSA35	First test date: May 1969
Form code: RSA45	First test date: Nov. 1969
Form code: RSA53	First test date: Dec. 1969
Form code: SSA13	First test date: Jan. 1970
Form code: SSA25	First test date: March 1970
Form code: SSA33	First test date: May 1970
Form code: SSA45	First test date: Nov. 1970
Form code: SSA55	First test date: Dec. 1970
Form code: TSA13	First test date: Jan. 1971
Form code: TSA25	First test date: March 1971
Form code: TSA33	First test date: April 1971
Form code: TSA43	First test date: Nov. 1971
Form code: TSA55	First test date: Dec. 1971
Form code: USA13	First test date: Jan. 1972
Form code: USA25	First test date: March 1972
Form code: USA33	First test date: April 1972
Form code: USA45	First test date: Nov. 1972
Form code: USA53	First test date: Dec. 1972
Form code: VSA13	First test date: Jan. 1973
Form code: VSA25	First test date: March 1973
Form code: VSA35	First test date: Nov. 1973
Form code: VSA43	First test date: Dec. 1973

Form code: WSA13	First test date: Feb. 1974	Form code: 3BSA63	First test date: Nov. 1979
Form code: WSA25	First test date: April 1974	Form code: 3BSA76	First test date: Dec. 1979
Form code: WSA302	First test date: Oct. 1974	Form code: 3CSA16	First test date: Jan. 1980
Form code: WSA401	First test date: Nov. 1974	Form code: 3CSA23	First test date: March 1980
Form code: WSA505	First test date: Dec. 1974	Form code: 3CSA36	First test date: May 1980
Form code: XSA101	First test date: Feb. 1975	Form code: 3CSA46	First test date: June 1980
Form code: XSA2	First test date: April 1975	Form code: 3CSA05	First test date: Oct. 1980
Form code: XSA301	First test date: June 1975	Form code: 3CSA06	First test date: Nov. 1980
Form code: XSA401	First test date: Nov. 1975	Form code: 3CSA07	First test date: Dec. 1980
Form code: XSA501	First test date: Dec. 1975	Form code: 3DSA01	First test date: Jan. 1981
Form code: YSA102	First test date: Jan. 1976	Form code: 3DSA02	First test date: April 1981
Form code: YSA203	First test date: April 1976	Form code: 3DSA03	First test date: May 1981
Form code: YSA311	First test date: June 1976	Form code: 3DSA04	First test date: June 1981
Form code: YSA404	First test date: Nov. 1976	Form code: 3DSA08	First test date: May 1981
Form code: YSA505	First test date: Dec. 1976	Form code: 3DSA05	First test date: Nov. 1981
Form code: ZSA116	First test date: Jan. 1977	Form code: 3DSA06	First test date: Dec. 1981
Form code: ZSA206	First test date: March 1977	Form code: 3ESA01	First test date: Jan. 1982
Form code: ZSA304	First test date: May 1977	Form code: 3ESA02	First test date: Jan. 1982
Form code: 3ASA10	First test date: Jan. 1978	Form code: 3ESA03	First test date: March 1982
Form code: 3ASA20	First test date: May 1978	Form code: 3ESA04	First test date: March 1982
Form code: ZSA402	First test date: Nov. 1977	Form code: 3ESA05	First test date: May 1982
Form code: ZSA516	First test date: Dec. 1977	Form code: 3ESA06	First test date: June 1982
Form code: 3ASA33	First test date: Oct. 1978	Form code: 3ESA07	First test date: Oct. 1982
Form code: 3ASA43	First test date: Nov. 1978	Form code: 3ESA08	First test date: Nov. 1982
Form code: 3ASA55	First test date: Dec. 1978	Form code: 3ESA09	First test date: Dec. 1982
Form code: 3BSA12	First test date: Jan. 1979	Form code: 3FSA01	First test date: Jan. 1983
Form code: 3BSA22	First test date: March 1979	Form code: 3FSA02	First test date: Jan. 1983
Form code: 3BSA31	First test date: May 1979	Form code: 3FSA03	First test date: March 1983
Form code: 3BSA45	First test date: June 1979	Form code: 3FSA04	First test date: March 1983
Form code: 3BSA56	First test date: Oct. 1979	Form code: 3FSA05	First test date: May 1983

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Form code: 3FSA06	First test date: June 1983
Form code: 3FSA07	First test date: Oct. 1983
Form code: 3FSA08	First test date: Nov. 1983
Form code: 3FSA09	First test date: Dec. 1983
Form code: 3GSA01	First test date: Jan. 1984
Form code: 3GSA02	First test date: Jan. 1984
Form code: 3GSA03	First test date: April 1984
Form code: 3GSA04	First test date: April 1984
Form code: 3GSA05	First test date: May 1984
Form code: 3GSA06	First test date: Oct. 1984
Form code: 3GSA07	First test date: Oct. 1984
Form code: 3GSA08	First test date: Nov. 1984
Form code: 3GSA09	First test date: Dec. 1984
Form code: 3HSA01	First test date: Jan. 1985
Form code: 3HSA02	First test date: March 1985
Form code: 3HSA03	First test date: March 1985
Form code: 3HSA04	First test date: May 1985
Form code: 3HSA05	First test date: June 1985
Form code: 3HSA06	First test date: Oct. 1985
Form code: 3HSA07	First test date: Oct. 1985
Form code: 3HSA08	First test date: Nov. 1985
Form code: 3ISA01	First test date: Jan. 1986
Form code: 3ISA03	First test date: March 1986
Form code: 3ISA04	First test date: March 1986
Form code: 3ISA07	First test date: June 1986
Form code: 3ISA25	First test date: May 1986
Form code: 3ISA09	First test date: Oct. 1986
Form code: 3ISA10	First test date: Oct. 1986
Form code: 3ISA11	First test date: Nov. 1986
Form code: 3ISA12	First test date: Dec. 1986
Form code: 3JSA01	First test date: Jan. 1987
Form code: 3JSA02	First test date: April 1987
Form code: 3JSA03	First test date: May 1987
Form code: 3JSA04	First test date: June 1987
Form code: 3JSA05	First test date: June 1987
Total: 153	

Section Distribution:

Sections:	N/A	1	2	3	4	5	6	7	8	9
V1	0	108	11	7	6	2	19	0	0	0
V2	0	22	65	18	30	14	4	0	0	0
V3	153	0	0	0	0	0	0	0	0	0

Antonyms - Content:

Codes:	1	2	3	4
Total:	794	878	914	819

Analogies - Content:

Codes:	1	2	3	4
Total:	768	806	759	667

Analogies - Sex specific:

Codes:	0	1	2	3	4	5	6	7	8	9
Total:	2194	38	11	6	35	0	527	138	20	31

Analogies - Content (across) by Sex specific (down):

Codes:	1	2	3	4
0	514	524	685	471
1	15	10	5	8
2	3	6	0	2
3	0	2	1	3
4	10	17	2	6
5	0	0	0	0
6	165	183	51	128
7	43	50	15	30
8	5	7	0	8
9	13	7	0	11

Sentence Completion - Content:

Codes:	1	2	3	4
Total:	617	676	664	518

Sentence Completion - Human rep.:

Codes:	0	1	2	3	4	5	6	7	8	9
Total:	704	433	162	35	8	9	262	717	145	0

Sentence Completion - Minority relevant:

Codes:	0	1	2	3	4	5	6	7
Total:	2368	29	15	3	23	24	5	8

Sentence Completion - Human role:

Codes:	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Total:	1689	120	71	63	57	192	15	1	74	0	0	42	27	23	15	44	5	0	12	0	0	2	1	1	2	6	10	0	3

Sentence Completion - Content (ac.oss) by Human rep. (down):

Codes:	1	2	3	4
0	154	223	296	31
1	134	81	52	166
2	47	33	22	60
3	5	2	2	26
4	2	4	1	1
5	2	5	0	2
6	105	56	46	55
7	132	251	193	141
8	36	21	52	36
9	0	0	0	0

Sentence Completion - Content (across) by Minority relevant (down):

Codes:	1	2	3	4
0	573	640	650	505
1	16	9	2	2
2	4	6	2	3
3	2	0	1	0
4	6	10	3	4
5	14	4	4	2
6	0	3	1	1
7	2	4	1	1

Sentence Completion - Content (across) by Human role (down):

Codes:	1	2	3	4
0	394	532	535	228
1	91	9	5	15
2	36	15	10	10
3	6	45	2	10
4	3	6	45	3
5	23	10	19	140
6	1	1	1	12
7	0	0	1	0
8	14	22	22	16
9	0	0	0	0
10	0	0	0	0
11	32	3	0	7
12	8	8	3	8
13	3	14	0	6
14	0	2	13	0
15	2	3	1	38
16	0	0	1	4
17	0	0	0	0
18	1	5	4	2
19	0	0	0	0
20	0	0	0	0
21	2	0	0	0
22	0	0	0	1
23	0	1	0	0
24	0	0	2	0
25	0	0	0	6
26	0	0	0	10
27	0	0	0	0
28	1	0	0	2

Sentence Completion - Human rep. (across) by Minority relevant (down):

Codes:	0	1	2	3	4	5	6	7	8	9
0	677	410	152	34	8	7	257	679	144	0
1	3	10	3	0	0	0	1	12	0	0
2	3	5	3	1	0	1	0	2	0	0
3	0	1	1	0	0	0	0	1	0	0
4	6	3	1	0	0	0	1	11	1	0
5	12	4	1	0	0	1	1	5	0	0
6	0	0	0	0	0	0	1	4	0	0
7	3	0	1	0	0	0	1	3	0	0

Sentence Completion - Human rep. (across) by Human role (down):

Codes:	0	1	2	3	4	5	6	7	8	9
0	704	3	0	2	1	3	259	716	1	0
1	0	102	5	2	1	0	1	0	9	0
2	0	58	0	0	0	0	1	0	12	0
3	0	53	1	0	1	0	0	1	7	0
4	0	39	0	0	0	0	0	0	18	0
5	0	142	1	3	2	0	0	0	44	0
6	0	7	0	0	1	0	0	0	7	0
7	0	1	0	0	0	0	0	0	0	0
8	0	24	0	0	2	0	1	0	47	0
9	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0
11	0	1	40	0	0	1	0	0	0	0
12	0	0	27	0	0	0	0	0	0	0
13	0	0	21	1	0	1	0	0	0	0
14	0	0	14	1	0	0	0	0	0	0
15	0	3	38	1	0	2	0	0	0	0
16	0	0	5	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0
18	0	0	10	0	0	2	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0
21	0	0	0	2	0	0	0	0	0	0
22	0	0	0	1	0	0	0	0	0	0
23	0	0	0	1	0	0	0	0	0	0
24	0	0	0	2	0	0	0	0	0	0
25	0	0	0	6	0	0	0	0	0	0
26	0	0	0	10	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0
28	0	0	0	3	0	0	0	0	0	0

Sentence Completion - Minority relevant (across) by Human role (down):

Codes:	0	1	2	3	4	5	6	7
0	1618	16	6	1	18	18	5	7
1	108	7	2	1	0	2	0	0
2	66	2	1	1	0	1	0	0
3	60	1	1	0	1	0	0	0
4	55	0	1	0	0	1	0	0
5	190	0	0	0	2	0	0	0
6	15	0	0	0	0	0	0	0
7	1	0	0	0	0	0	0	0
8	72	1	0	0	1	0	0	0
9	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0
11	38	2	1	0	0	1	0	0
12	26	0	1	0	0	0	0	0
13	21	0	1	0	0	0	0	1
14	14	0	1	0	0	0	0	0
15	44	0	0	0	0	0	0	0
16	4	0	0	0	1	0	0	0
17	0	0	0	0	0	0	0	0
18	11	0	0	0	0	1	0	0
19	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0
21	2	0	0	0	0	0	0	0
22	1	0	0	0	0	0	0	0
23	1	0	0	0	0	0	0	0
24	2	0	0	0	0	0	0	0
25	6	0	0	0	0	0	0	0
26	10	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0
28	3	0	0	0	0	0	0	0

Reading Comprehension - Content class.:

Codes:	1	2	3	4	5	6	7	8	9	10
Total:	151	132	153	151	153	29	62	68	5	55

Reading Comprehension - Length:

Codes:	1	2	3
Total:	11	242	706

Reading Comprehension - Human content:

Codes:	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Total:	290	122	44	9	24	222	10	33	27	5	32	119	10	11	1	0

Reading Comprehension - Minority relevant:

Codes:	0	1	2	3	4	5	6	7
Total:	828	66	13	1	25	16	3	7

Reading Comprehension - Human role:

Codes:	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Total:	325	113	73	73	108	54	6	1	85	0	0	12	3	2	3	7	4	0	4	0	0	14	1	3	4	18	36	0	10

Reading Comprehension - Reading skill tested:

Codes:	1	2	3	4	5	6
Total:	649	1073	1649	353	359	342

Reading Comprehension - Sex reference:

Codes:	0	1	2	3	4	5	6
Total:	2786	956	116	164	164	3	236

Reading Comprehension - Minority reference:

Codes:	0	1
Total:	4012	413

Reading Comprehension - NOT or EXCEPT stem:

Codes:	0	1
Total:	4114	311

Reading Comprehension - Roman numeral format:

Codes:	0	1
Total:	4219	206

Reading Comprehension - Length (across) by Items (down):

Codes:	1	2	3
0	0	0	0
1	0	0	0
2	5	0	0
3	4	132	2
4	0	76	4
5	2	33	699
6+	0	1	1

Reading Comprehension - Content class. (across) by Length (down):

Codes:	1	2	3	4	5	6	7	8	9	10
1	1	1	2	2	1	2	1	1	0	0
2	39	39	30	32	48	8	11	28	3	4
3	111	92	121	117	104	19	50	39	2	51

Reading Comprehension - Content class. (across) by Human content (down):

Codes:	1	2	3	4	5	6	7	8	9	10
0	100	81	30	25	2	11	21	16	2	2
1	9	6	16	25	55	1	2	7	1	0
2	0	0	2	8	33	0	0	1	0	0
3	0	0	1	3	5	0	0	0	0	0
4	0	1	2	8	11	0	1	1	0	0
5	19	37	53	45	3	10	15	19	1	20
6	5	0	2	1	1	1	0	0	0	0
7	4	0	6	9	4	0	3	4	1	2
8	1	1	12	3	1	1	2	3	0	3
9	0	0	4	0	1	0	0	0	0	0
10	0	0	2	2	28	0	0	0	0	0
11	13	6	18	20	0	5	15	14	0	28
12	0	0	1	1	6	0	0	2	0	0
13	0	0	4	1	3	0	3	0	0	0
14	0	0	0	0	0	0	0	1	0	0
15	0	0	0	0	0	0	0	0	0	0

Reading Comprehension - Content class. (across) by Items (down):

Codes:	1	2	3	4	5	6	7	8	9	10
0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0
2	1	0	1	1	1	0	0	1	0	0
3	18	20	15	19	36	4	9	16	1	0
4	19	18	10	14	9	1	0	7	2	0
5	113	94	126	117	107	23	53	44	2	55
6+	0	0	1	0	0	1	0	0	0	0

Reading Comprehension - Content class. (across) by Minority relevant (down):

Codes:	1	2	3	4	5	6	7	8	9	10
0	147	129	93	109	139	29	59	64	5	54
1	2	2	26	25	10	0	0	1	0	0
2	0	0	5	5	1	0	1	1	0	0
3	0	0	1	0	0	0	0	0	0	0
4	2	0	13	5	3	0	0	2	0	0
5	0	1	8	5	0	0	1	0	0	1
6	0	0	2	1	0	0	0	0	0	0
7	0	0	5	1	0	0	1	0	0	0

Reading Comprehension - Content class. (across) by Human role (down):

Codes:	1	2	3	4	5	6	7	8	9	10
0	102	82	42	28	5	13	22	24	2	5
1	1	0	12	64	7	1	1	24	0	3
2	0	2	20	15	4	2	7	8	1	14
3	0	1	38	5	13	0	14	0	0	2
4	30	42	5	4	1	10	3	2	1	10
5	0	0	2	4	45	0	1	0	0	2
6	0	0	0	0	6	0	0	0	0	0
7	0	0	0	0	1	0	0	0	0	0
8	11	4	22	7	7	3	9	6	0	16
9	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0
11	0	0	1	9	1	0	0	1	0	0
12	0	0	1	0	1	0	0	1	0	0
13	0	0	0	1	0	0	1	0	0	0
14	1	1	1	0	0	0	0	0	0	0
15	0	0	0	0	7	0	0	0	0	0
16	2	0	0	0	2	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0
18	3	0	1	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0
21	0	0	0	12	0	0	1	1	0	0
22	0	0	0	0	0	0	0	1	0	0
23	0	0	1	0	2	0	0	0	0	0
24	0	0	0	0	1	0	0	0	1	2
25	0	0	0	1	16	0	1	0	0	0
26	0	0	3	0	31	0	2	0	0	0
27	0	0	0	0	0	0	0	0	0	0
28	1	0	4	1	3	0	0	0	0	1

Reading Comprehension - Human content (across) by Length (down):

Codes:	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	6	1	1	0	0	1	0	0	1	0	0	0	1	0	0	0
2	95	31	10	5	14	47	4	10	5	2	6	10	1	2	0	0
3	189	90	33	4	10	174	6	23	21	3	26	109	8	9	1	0

Reading Comprehension - Human content (across) by Items (down):

Codes:	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	2	0	0	0	0	1	0	0	1	0	0	0	1	0	0	0
3	55	21	9	3	8	24	1	8	3	1	4	0	0	1	0	0
4	36	9	2	2	5	18	2	1	1	0	2	0	1	1	0	0
5	197	92	33	4	11	178	6	24	22	4	26	119	8	9	1	0
6+	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0

Reading Comprehension - Human content (across) by Minority relevant (down):

Codes:	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
0	266	96	43	6	18	190	10	26	20	1	26	113	6	6	1	0
1	7	19	0	3	3	13	0	3	3	3	4	3	4	1	0	0
2	4	2	1	0	1	3	0	2	0	0	0	0	0	0	0	0
3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	8	2	0	0	0	7	0	0	2	1	2	0	0	3	0	0
5	3	3	0	0	1	3	0	2	1	0	0	2	0	1	0	0
6	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	1	4	0	0	1	0	0	1	0	0	0	0

Reading Comprehension - Human content (across) by Human role (down):

Codes:	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
0	288	0	0	0	0	2	1	3	23	0	0	3	4	1	0	0
1	0	31	8	0	0	55	0	4	1	0	0	13	1	0	0	0
2	1	15	0	0	1	36	0	0	1	0	0	16	0	3	0	0
3	0	16	5	0	1	36	0	0	0	0	0	13	0	2	0	0
4	0	19	0	0	0	72	0	2	0	0	0	13	0	1	1	0
5	0	28	15	0	1	3	0	0	0	0	0	5	2	0	0	0
6	0	3	2	0	0	0	0	0	0	0	0	0	0	1	0	0
7	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	7	0	0	0	18	0	1	0	1	0	54	1	3	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0	2	0	3	7	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0
14	0	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0
15	0	0	0	4	2	0	1	0	0	0	0	0	0	0	0	0
16	0	0	0	0	1	0	2	0	0	0	0	0	1	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	1	0	2	0	1	0	0	8	0	0	1	1	0	0	0	0
22	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	1	0	0	2	0	0	0	0	0
24	0	0	0	0	1	0	0	3	0	0	0	0	0	0	0	0
25	0	0	8	0	0	0	0	0	1	0	9	0	0	0	0	0
26	0	0	4	0	6	0	0	4	1	1	20	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	5	0	3	0	1	1	0	0	0

Reading Comprehension - Minority relevant (across) by Length (down):

Codes:	0	1	2	3	4	5	6	7
1	11	0	0	0	0	0	0	0
2	227	8	1	0	3	1	1	1
3	590	58	12	1	22	15	2	6

Reading Comprehension - Minority relevant (across) by Items (down):

Codes:	0	1	2	3	4	5	6	7
0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0
2	5	0	0	0	0	0	0	0
3	131	3	0	0	3	1	0	0
4	76	3	0	0	0	0	0	1
5	614	60	13	1	22	15	3	6
6+	2	0	0	0	0	0	0	0

Reading Comprehension - Minority relevant (across) by Human role (down):

Codes:	0	1	2	3	4	5	6	7
0	292	11	4	1	10	5	1	1
1	92	13	4	0	2	1	1	0
2	66	4	1	0	1	1	0	0
3	53	9	1	0	5	2	0	3
4	100	4	0	0	1	3	0	0
5	50	4	0	0	0	0	0	0
6	4	0	0	0	2	0	0	0
7	1	0	0	0	0	0	0	0
8	73	4	1	0	2	2	1	2
9	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0
11	6	4	0	0	0	1	0	1
12	2	1	0	0	0	0	0	0
13	2	0	0	0	0	0	0	0
14	3	0	0	0	0	0	0	0
15	7	0	0	0	0	0	0	0
16	2	1	1	0	0	0	0	0
17	0	0	0	0	0	0	0	0
18	4	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0
21	10	3	1	0	0	0	0	0
22	1	0	0	0	0	0	0	0
23	3	0	0	0	0	0	0	0
24	4	0	0	0	0	0	0	0
25	16	2	0	0	0	0	0	0
26	31	2	0	0	2	1	0	0
27	0	0	0	0	0	0	0	0
28	6	4	0	0	0	0	0	0

Reading Comprehension - Human role (across) by Length (down):

Codes:	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
1	8	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
2	103	26	18	7	22	15	0	0	12	0	0	8	2	1	0	4	1	0	1	0	0	2	1	0	2	0	14	0	3
3	214	87	55	65	86	38	6	1	73	0	0	4	1	1	3	3	3	0	3	0	0	11	0	3	2	18	22	0	7

Reading Comprehension - Human role (across) by Items (down):

Codes:	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	4	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	60	18	8	3	9	10	0	0	5	0	0	3	2	0	0	3	0	0	0	0	0	2	1	0	2	0	11	0	1
4	37	10	3	2	9	4	0	1	2	0	0	5	0	0	0	1	1	0	1	0	0	1	0	0	0	0	2	0	1
5	224	85	61	68	90	39	6	0	78	0	0	4	1	2	3	3	3	0	2	0	0	11	0	3	2	18	23	0	8
6+	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0

Reading Comprehension - Content class. (across) by Reading skill tested (down):

Codes:	1	2	3	4	5	6	7	8	9	10
1	107	89	112	116	69	24	43	46	2	41
2	201	182	172	164	113	37	71	63	6	64
3	267	211	244	245	346	46	96	101	2	91
4	51	55	60	59	41	7	25	27	1	27
5	47	39	68	65	36	9	33	33	5	24
6	24	26	66	51	76	14	24	28	5	28

Reading Comprehension - Content class. (across) by Sex reference (down):

Codes:	1	2	3	4	5	6	7	8	9	10
0	615	498	484	392	129	96	208	200	21	143
1	51	75	151	188	350	17	27	61	0	36
2	3	4	9	31	62	0	3	4	0	0
3	1	1	19	17	113	0	7	5	0	1
4	8	12	30	27	20	8	25	17	0	17
5	0	0	0	0	1	0	2	0	0	0
6	19	12	29	45	6	16	20	11	0	78

Reading Comprehension - Content class. (across) by Minority reference (down):

Codes:	1	2	3	4	5	6	7	8	9	10
0	687	595	537	564	631	137	283	287	21	270
1	10	7	185	136	50	0	9	11	0	5

Reading Comprehension - Content class. (across) by NOT or EXCEPT stem (down):

Codes:	1	2	3	4	5	6	7	8	9	10
0	629	562	676	644	630	133	275	286	18	261
1	68	40	46	56	51	4	17	12	3	14

Reading Comprehension - Content class. (across) by Roman numeral format (down):

Codes:	1	2	3	4	5	6	7	8	9	10
0	646	548	697	673	666	133	280	293	18	265
1	51	54	25	27	15	4	12	5	3	10

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Reading Comprehension - Human content (across) by Reading skill tested (down):

Codes:	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	197	72	26	5	14	161	8	27	16	3	16	90	7	7	0	0
2	386	118	34	6	20	254	9	37	33	5	25	123	10	12	1	0
3	443	256	99	16	37	366	15	48	46	6	68	214	16	17	2	0
4	112	28	11	4	6	90	3	13	11	1	9	53	7	4	1	0
5	99	31	9	2	10	93	6	15	9	4	14	59	3	4	1	0
6	61	54	21	4	12	78	6	8	10	4	18	55	3	8	0	0

Reading Comprehension - Human content (across) by Sex reference (down):

Codes:	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
0	1241	121	27	5	19	652	39	106	105	15	20	370	25	38	3	0
1	12	413	121	0	7	281	0	17	11	2	37	37	6	11	1	0
2	0	5	1	29	43	1	4	7	0	0	24	0	2	0	0	0
3	5	3	43	1	27	2	1	12	0	5	62	2	0	0	1	0
4	28	11	7	2	2	38	2	3	5	0	5	48	11	2	0	0
5	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	0
6	12	6	1	0	0	68	1	2	4	1	2	137	1	1	0	0

Reading Comprehension - Human content (across) by Minority reference (down):

Codes:	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
0	1234	456	195	29	82	944	47	121	101	12	134	575	36	41	5	0
1	64	103	5	8	17	98	0	27	24	11	16	19	10	11	0	0

Reading Comprehension - Human content (across) by NOT or EXCEPT stem (down):

Codes:	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
0	1181	527	185	35	87	988	46	134	121	23	135	554	44	49	5	0
1	117	32	15	2	12	54	1	14	4	0	15	40	2	3	0	0

Reading Comprehension - Human content (across) by Roman numeral format (down):

Codes:	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
0	1214	536	196	34	97	990	47	146	122	23	147	569	44	49	5	0
1	84	23	4	3	2	52	0	2	3	0	3	25	2	3	0	0

Reading Comprehension - Minority relevant (across) by
Reading skill tested (down):

Codes:	0	1	2	3	4	5	6	7
1	538	63	9	1	19	12	2	5
2	915	77	22	1	32	14	4	8
3	1440	111	17	2	37	23	6	13
4	303	21	4	1	11	8	3	2
5	308	19	7	0	13	9	0	3
6	284	30	6	0	7	12	0	3

Reading Comprehension - Minority relevant (across) by Sex
reference (down):

Codes:	0	1	2	3	4	5	6	7
0	2397	173	44	5	90	46	9	22
1	800	96	16	0	21	13	5	5
2	85	20	3	0	3	1	0	4
3	140	11	1	0	4	7	1	0
4	142	16	1	0	1	3	0	1
5	2	1	0	0	0	0	0	0
6	222	4	0	0	0	8	0	2

Reading Comprehension - Minority relevant (across) by
Minority reference (down):

Codes:	0	1	2	3	4	5	6	7
0	3783	102	11	1	43	39	9	24
1	5	219	54	4	76	39	6	10

Reading Comprehension - Minority relevant (across) by NOT
or EXCEPT stem (down):

Codes:	0	1	2	3	4	5	6	7
0	3536	298	53	5	107	67	14	34
1	252	23	12	0	12	11	1	0

Reading Comprehension - Minority relevant (across) by
Roman numeral format (down):

Codes:	0	1	2	3	4	5	6	7
0	3609	305	62	4	119	74	15	31
1	179	16	3	1	0	4	0	3

Reading Comprehension - Human role (across) by Reading skill tested (down):

Codes:	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
1	217	85	45	50	89	27	3	1	55	0	0	8	0	2	3	2	5	0	3	0	0	12	0	1	3	7	21	0	10
2	431	101	64	89	139	47	4	1	93	0	0	13	2	2	2	2	5	0	8	0	0	16	0	5	1	16	27	0	5
3	497	197	132	135	182	121	17	2	148	0	0	19	3	1	5	14	4	0	6	0	0	20	2	7	6	42	71	0	18
4	126	39	36	24	36	7	0	0	41	0	0	5	2	2	0	3	0	0	1	0	0	5	1	0	3	6	11	0	5
5	112	55	30	31	37	10	2	0	36	0	0	3	1	1	4	2	2	0	1	0	0	7	0	1	2	5	12	0	5
6	73	42	39	28	30	31	4	0	40	0	0	1	3	2	1	5	3	0	1	0	0	5	0	1	1	14	14	0	4

Reading Comprehension - Human role (across) by Sex reference (down):

Codes:	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
0	1370	239	178	171	313	50	11	0	261	0	0	9	1	3	9	8	16	0	15	0	0	40	3	0	10	17	35	0	27
1	16	214	116	134	153	166	18	4	53	0	0	1	0	0	0	0	0	0	1	0	0	12	0	10	1	25	30	0	2
2	0	1	2	2	0	0	0	0	1	0	0	30	6	3	5	16	3	0	3	0	0	3	0	0	1	5	30	0	5
3	5	9	0	2	1	13	0	0	4	0	0	8	2	2	1	4	0	0	0	0	0	5	0	5	1	40	53	0	9
4	43	27	13	23	12	3	1	0	26	0	0	1	2	0	0	0	0	0	1	0	0	1	0	0	2	2	6	0	1
5	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6	21	29	37	25	34	11	0	0	68	0	0	0	0	1	0	0	0	0	0	0	0	4	0	0	1	1	2	0	2

Reading Comprehension - Human role (across) by Minority reference (down):

Codes:	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
0	1360	452	323	281	490	226	22	4	383	0	0	30	11	10	15	28	15	0	20	0	0	48	3	15	16	90	136	0	34
1	96	67	23	76	23	17	8	0	30	0	0	19	0	0	0	0	4	0	0	0	0	17	0	0	0	0	20	0	13

APPENDIX C. ORDERING OF SAT-VERBAL ITEM TYPES

1. JSA13–WSA25
   75 minutes, 90 items
   Section 1: 30 minutes, 40 questions
   1–10 Sentence completion
   11–20 Antonym
   21–30 Analogy
   31–40 Reading comprehension—2 passages with 5 items each
   Section 2: 45 minutes, 50 questions
   1–10 Reading comprehension—2 passages with 5 items each
   11–18 Sentence completion
   19–26 Antonym
   27–35 Analogy
   36–50 Reading comprehension—3 passages with 5 items each
   Variations—in TSA43, USA33, USA53, VSA25, VSA35, and WSA25
   Section 1 was as follows:
   1–5 Sentence completion
   6–10 Antonym
   11–15 Analogy
   16–20 Sentence completion
   21–25 Antonym
   26–30 Analogy
   31–40 Reading comprehension—2 passages with 5 items each

2. WSA3–XSA3
   60 minutes, 85 questions
   Verbal 1: 30 minutes, 45 questions
   1–15 Antonym
   16–25 Sentence completion
   26–35 Analogy
   36–45 Reading comprehension—2 passages with 5 items each
   Verbal 2: 30 minutes, 40 questions
   1–10 Antonym
   11–25 Reading comprehension—3 passages with 5 items each
   26–30 Sentence completion
   31–40 Analogy

3. XSA4–3ASA2
   60 minutes, 85 questions
   Verbal 1: 30 minutes, 45 questions
   1–15 Antonym
   16–20 Sentence completion
   21–30 Reading comprehension—2 passages with 5 items each
   31–35 Sentence completion
   36–45 Analogy
   Verbal 2: 30 minutes, 40 questions
   1–10 Antonym
   11–15 Sentence completion
   16–25 Analogy
   26–40 Reading comprehension—3 passages with 5 items each

4. 3ASA3–3HSA08
   60 minutes, 85 items
   Verbal 1: 30 minutes, 45 questions
   1–15 Antonym
   16–20 Sentence completion
   21–30 Reading comprehension—2 long passages with 5 items each
   31–35 Sentence completion
   36–45 Analogy
   Verbal 2: 30 minutes, 40 questions
   1–10 Antonym
   11–15 Sentence completion
   16–25 Analogy
   26–40 Reading comprehension—4 passages (3 medium with a total of 10 items, 1 long with 5 items)

5. 3ISA01–Present
   60 minutes, 85 items
   1–15 Antonym
   16–25 Sentence completion
   26–35 Reading comprehension—2 long passages with 5 items each
   36–45 Analogy
   Verbal 2: 30 minutes, 40 questions
   1–10 Antonym
   11–15 Sentence completion
   16–25 Analogy
   26–40 Reading comprehension—4 passages (3 medium with a total of 10 items, 1 long with 5 items)

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